



INSTRUCTION MANUAL

Automatic Water Softener System



Model: PSE-08

Xsential Water Filtration Systems

78 Daly Street Ascot Western Australia 6104

Ph: 1300 366 295 Fax: (08) 9277 2266

www.xsential.com.au

Welcome to use Xsential mini water softener system

- Thank you for choosing Xsential mini-series water softener system.
- We hope that this system can provide you years of service and bring more enjoyment to your home life.
- Before using the new softener system, please read the operating instructions carefully.
- Should you be engaged in any problems which cannot be solved by this guide, please contact Xsential distributor.

Functions

- The specific self-maintenance functions of Xsential water softener system can recover the soft water treatment performance for the whole system periodically. Therefore, it has long-term, stable softening function, without frequent replacement of the filter, greatly reducing the operating costs.
- This system can be in parallel or series according to the different requirements, to increase water production, or further enhance water quality

Note: To ensure our products can be used for serving your interests at once, please make sure all other devices(connector, valve, faucet and so on) are firmly connected and in good condition.

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FOR USERS

- The customers are suggested to learn about the quality of raw water before using our system. In some circumstances, if you apply our system to the raw water which far exceeds the standard water quality for residential, some pollutants in the water (e.g. manganese and other heavy metal ions) may poison the process agents in the system and cause you have to replace the process agents.
- The process agent in system cannot be out of water soak for long time. It will turn dry out and ineffective
- The process agent cannot work normally under the environment temperature beyond 1° C - 38 ° C
- Please ensure all the inlets and outlets turn open when the system is at work.

SYSTEM COMPONENTS

- **Controller**
The product applies the AMD valve controller for automatic control of the entire system. The daily maintenance for the entire system is simple and convenient, only need to select the operation on the control panel.
- **Water Softener Body**
The pressure tank in the system uses the FRP and other corrosion-resistant materials as the principal, together with high quality, significant treatment effect of filter media, to complete the main task of softening process

PLACE TO INSTALL

The place where water softener system installed is very important. It needs to meet the following conditions:

- Horizontal platform or ground;
- Ambient temperature exceeds 34 ° F (1 ° C) and below 120 ° F (49 ° C);
- water pressure below 0.70MPa and above 0.14MPa;
- Stable power supply to the controller;
- The total length of the pipe connected to the water heater should be ten feet (three meters) at least, to prevent backflow of hot water into the system;
- The drainage point should be set as close as possible to the ground;
- Shut-off valve or bypass valve needs to be installed in the **water pipe connecting points**;
- Valve should be designed to meet the minimum deviation of the pipe center. the pipe cannot support the weight;
- Before the plastic valve is connected to the pipe, make sure all the pipes are welded completely and firmly.

Outdoor site

When the water softener system is installed outdoors, following notes must be paid attention:

- Humidity: rain may affect equipment performance. The system is not designed to undertake the excessive humidity and water spray from below. (e.g: continuous severe wet fog, corrosive environment, nozzle sprays upward)

- Direct sunlight: the materials of the product will fade under the direct sunlight, but the mechanism won't be reduced. If the controller has to be placed under sunlight, the protective cover should be placed on the whole unit.
- Temperature: the valve and controller will be damaged if the working temperature is too cold or overheated. The water in the valve will freeze if the temperature is below freezing, then lead to the physical damage of internal components and pipes. High temperature will affect the controller and the display may become hard to recognize, but the controller shall be on working. When the temperature comes back to normal working temperature, the display will return normal. Protective cover shall be helpful under high temperature circumstance.

SYSTEM INSTALLATION

THE FOLLOWING OPERATIONS SHALL BE CARRIED OUT BY PROFESSIONAL WORKERS

- Firstly, determine the system installation location
- Determine the all connection of PSE-08 (i.e. inlet, outlet, over flow drain, and waste water drain)
- Once the connection is known, connect the water supply to the inlet connection of the system. Connect outlet of PSE-08 to the appliance (the supply water pipe diameter cannot be smaller to than inlet pipe on controller to ensure the system provide the normal water production).
- The inlet and outlet pipes shall be installed with **mechanical valve**. The bypass valve is suggested to be installed between the inlet pipe and outlet pipe.
- Connect the waste water drain to the timer. Minimize the drain pipe length and corners, the distance between controller and **drainage channel** shall be less than 6 meters. An **air gap** between the drain pipe and the waste water drain is needed to prevent waste water from siphon back into the system.
- Connect the over flow drain to the waste water drain. Ensure an air gap is provided between the pipe and the waste water drain. **DO NOT CONNECT THE WASTE WATER DRAIN AND OVER FLOW DRAIN TO SAME PIPE AT ALL TIME.**
- Please do not install any valves in the drain pipes.
- Each pipe shall have its support point, the controller cannot bear the pressure and gravity.
- Ensure the electrical parameter of power supply is consistent with controller's data.
- Insert the power plug into the right socket.

Warning: Do not use **lead base solder** to weld pipes, and do not use tools to tighten the plastic connector. It may break the connecting point due to the stress.

Note: All the information described herein is as per commercial standards. Local regulation may require user to change the operation procedures as above, please check the local administration for accurate information before installation.

TECHINICAL PARAMETER

	Integrated Under Cabinet Type	
	Model	PSE-08
	Control System	AMD Electronic Controller
	Regeneration Period	1~31 Days
	Default Regeneration Time	AM 2:00(Adjustable)
	Inflow Water Quality	Municipal Water, $\text{CaCO}_3 \leq 450 \text{ mg/L}$
	Best Softening Flow rate	0.5 tons per hour
	Best Working Pressure	0.15~0.30MPa
	Inflow Water Temperature	1~38°C
	Power Supply	220V AC / 50Hz
	Volume of Regenerant	8 Kg
	Size of Inlet and Outlet Pipe	1/2 inches
	Net Weight	≤11 Kg
	Dimension(L*W*H)	360×200×485 mm

LANGUAGE SELECTION

1). Language of PSE-08:

Step 1: press both ▼ and ▲ at the same time for about 3-5seconds, there will be a new page appear on the screen

Step 2: press ▼ for **three times** to choose the sixth item and then press ■ to choose

Step 3: press ▼ to choose the “English” and then press ■ to confirm

When there is no hourglass  displaying on the screen

- Simultaneously press ■ and ▲ to advance one cycle.

When cam reaches next cycle, "C2" will be displayed.

- Repeat ■ and ▲ to advance through each cycle(C1- C8).

It would take about 3 minutes to finish.

GENERAL OPERATIONS

The water quality parameters of each water softener system are predefined, the user can choose depending on the specific circumstances.

1. Switch on power

Turn on the power plug socket switch connecting to the system, switch on power, and you can hear controller motor starting to work.

2. Connect to water supply

Firstly open the control valve of outlet pipeline, and then open the control valve of inlet pipeline. Then the water after softening treatment will supply to you continuously.

3. Ensure self-maintenance function works

After a period of work, the system will conduct automatic maintenance based on the set time. This procedure will consume regenerate. The user only needs to set the time and quantity to add recycling regenerate to the system to keep the water quality after treatment within the range of usage as required.

TIMER SETUP

Automatic control system requires a sustained and stable power supply. When the power failure happens for any reason in use, please reset system timer in order to ensure the system can work in accordance with the initial setup process.

The control valve is Time type controller, when it reaches the setting time, the system will automatically start maintenance function. The control valve has big LCD display and implements menu styled control mode. It is user-friendly and the user can modify the parameters displayed on the LCD easily.



Main Functions of Control Valve

- Electronic clock: Under the stand-by status, it functions as a clock.
- Automatic-regeneration: Washing cycle and time can be set.
- Manual regeneration: Manual regeneration can be implemented from the menu.
- Manual mix water function: End user can adjust the proportion according to the specific requirement of water quality.
- Automatic meter preference: Meter delay mode will be selected automatically when the flow sensor was installed.
- Automatic memorizing: Setting information can be memorized when the power is off.
- Reset default: All current setting can be cleared and factory defaults can be restored by selecting the reset option.
- Failure protection: Motor protection, flow sensor failure alarm, positioning failure alarm.

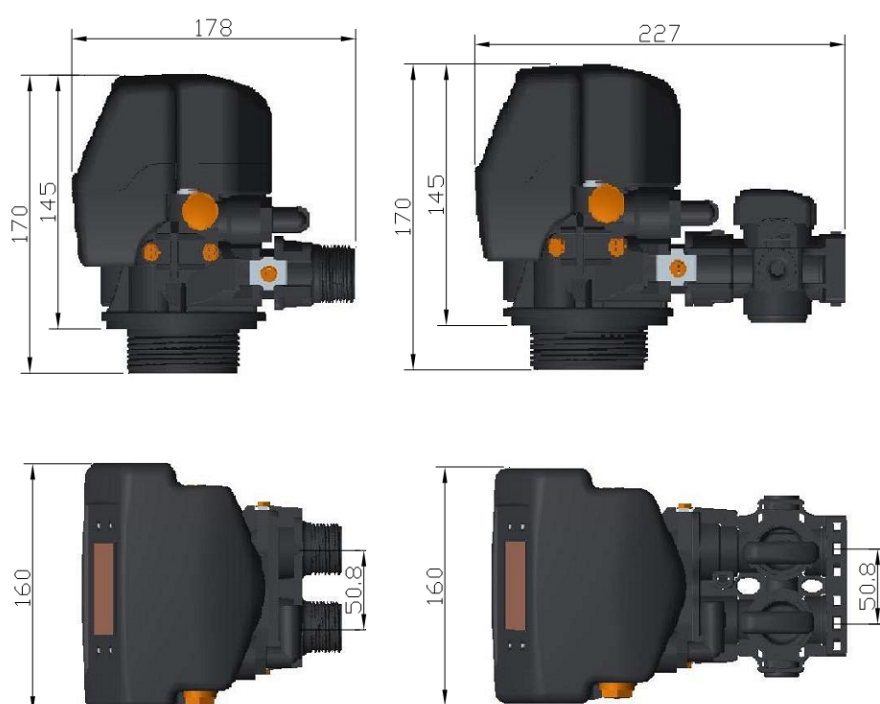
Highlighted characteristics

- Precisely position controlling: implement a precise regeneration process control through infrared detection.
- Large-scale LCD display(background light): All the operation information can be displayed.
- Three regeneration modes: time, meter immediate, meter delayed.

- Child Lock: All keys will be locked after 1 minutes during the stand-by status, press and hold for 3 seconds to unlock.
- “MENU”、“SET”、“ \wedge ”、“ \vee ” four keys control interface: key“ \wedge ”、“ \vee ” are used to choose or change all settings, “SET” button for setting or confirming, and "MENU" for entering menu or canceling.

Controller Technical Parameters

- Maximized Hydrostatic Pressure: 20Kg/cm²
- Working Pressure: 1.38~7.0Kg/cm²
- Working Temperature: 0°C~39°C
- Power Adapter: Input: AC100V~AC240V, 50Hz/60Hz; Output: DC12V



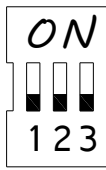
Controller Functions and Operations

1. Controller Function Selection

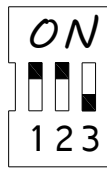
The system automatically detects Function Set Switcher and Flow Sensor when the system connects to the power supply:

- (1) Picture 1: No.1 and No.2 turns “closed”, the controller is water filter valve. Picture 2: No.1 and No.2 turns “ON”, the controller is water softener valve.
- (2) Picture 3: No.3 turns “ON”, the system program language is CHINESE; No.3 turns “closed”, the system program language is ENGLISH.?
- (3) When there is no flow sensor, default set for regeneration is meter delay mode. User can set other modes: meter immediate mode or time mode.

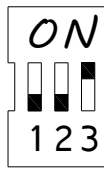
When there is flow sensor, default set for regeneration is time mode. There is no display of other two modes in the menu.



Picture 1



Picture 2



Picture 3

2. System initialization

The controller will enter the initialization status when it turns on. During initialization process, controller displays:

System Initializing
Please Wait...

3. Stand-by status

Under stand-by status, the controller displays:

- Time mode displays:

Current Day/Time:
XX-XX-XXXX XX:XX:XX
Time of Next Regen:
XX-XX-XXXX XX:XX:XX

- Meter mode display (for meter immediate and meter delayed):

Current Day / Time is:
XX-XX-XXXX XX:XX:XX
Residual / Total Water
xx.xxm3 / xxxx.xxm3

The accumulated water usage automatically goes back to zero when user restores defaults

4. Parameter Settings

Under stand-by status, press "MENU" to enter menu setting interface. The menu display differently for 3 different regeneration modes, more details see menu demonstration. Selects the current setting category, the display will appears shadowed, press "SET" enters this setting.

① Current Time setting

Screen display:

XX- XX -XX XX:XX

Press "MENU" to Return

Press "SET" to Confirm

The current setting appears shadowed, then press "SET" and enter next setting. Press "MENU" to cancel and return to the upper menu. Press "SET" to complete and save the setting. It will display:

Setting Completed

Press "MENU" to Return

Now press "MENU" and returns to the upper menu. System will automatically exit and return to the stand-by status if there is no operations in one minute. And system will automatically resume the previous setting if there is no pressing "SET" to save the new setting.

② **Regeneration time setting**

Screen display:

xx::xx

Press "MENU" to Return

Press "SET" to Confirm

Default time of the regeneration is 2 A.M.

For setting method, refer to ①

③ **Regeneration cycle settings**

Screen display:

xx days

Press "MENU" to Return

Press "SET" to Confirm

Default regeneration cycle is 7 days

For setting method, refer to ①

④ **Regeneration meter setting**

Screen display:

Capacity: xx:xxm³

Press "MENU" to Return

Press "SET" to Confirm

Default meter standard is 06.00 m³

For setting method, refer to ①

⑤ **Manual Stepwise Regeneration**

Screen display:

Backwash

Remarks: Filter valve only has backwash and rinse settings

Brine Draw

Rinse

Refill

The operating procedure is as follows:

Select the item using "⤴" 、 "⤵" key, the selected item displays shadowed. Press "SET" to confirm.

Under backwash status it displays:

Backwashing

Any key to cancel

Under this condition, press any key to stop backwashing, and system returns to the upper menu. If this condition stays 30 minutes without pressing any key, backwash will stop automatically and system returns to the stand-by status.

Other status operation is as before.

Under regenerations status (including manual stepwise regeneration, manual regeneration and system automatic regeneration), press any key can stop the process. When the system is returning to stand-by status, no key can be operated during this time and displays:

[Back to Service](#)


Please Wait

⑥ Manual Sequence Regeneration

Screen displays:

Regeneration

Any key to cancel


XX%

Regeneration process is as follows:

- Backwash: System backwash duration according to the settings. (default setting is 20 minutes), enter the next process after finished.
- System Brine Draw: System brine draws duration according to the settings. (default setting is 50 minutes), enter the next process after finished.
- Rinse: System rinse duration according to the settings. (default setting is 15 minutes), enter the next process after finished.
- Refill: System refills according to the expected time. (default setting is 10 minutes), enter the next process after finished.
- Service: System returns to the service when the entire regeneration process completes.

In the regeneration process, press and hold any key for 3 seconds to stop regeneration and system goes back to service status.

⑦ Advanced Settings

- Backwash Duration
- Brine Draw Duration (filter valve does not have this option)
- Rinse Duration
- Refill Duration (filter valve does not have this option)
- Regeneration Mode
- Load Default

Operating procedure is as follows:

Select the item using “ \wedge ” 、 “ \vee ” key, the selected item displays shadowed. Press "SET" to confirm, press “Menu” to back to upper menu.

Choose the backwash duration, it displays:

xx Minutes

Press “MENU” to Return

Press “SET” to Confirm

The minutes glittering and shadowed display previous setting time, use “ \wedge ” 、 “ \vee ” key to change the setting, press "SET" to save and confirm, it will display:

Setting is Completed

Press [MENU] to Return

Press “MENU” to exit and go back to the upper menu. System will automatically exit and return to the stand-by status if there is no operations in one minute. And system will automatically resume the previous setting if there is no pressing "SET" to save the new setting.

Other duration setting is same. When it comes to the setting time for regeneration, the system will run according to setting time by Advanced Settings and steps by **Manual Sequence Regeneration**.

The programmable regeneration time and regeneration cycle start to run, the system will generate according to both duration setting and manual regeneration procedure from advanced settings. Press any key to stop regeneration and the system goes back to stand-by status.

④ **Regeneration mode**

■ time

■ meter immediate

■ meter delayed

Operating procedure is as follows:

Select the item using “ \wedge ” 、 “ \vee ” key, the selected item displays shadowed. Press "SET" to confirm press “Menu” to back to upper menu.

After Choosing meter immediate mode, when water consumption reaches the setting amount (default value is 06.00tons), the system will execute a circle according to manual sequence regeneration setting. Press any key for 3 seconds to cancel regeneration, the system will return to stand-by condition.

Choosing meter delayed mode, after water consumption reaches the setting amount (default

value is 06.00tons),and when it reaches the setting time for regeneration, the system will execute a circle according to manual sequence regeneration setting. When the circle ended, the residual water under stand-by status will be initialized automatically (restore user's set-up of water volume for regeneration cycle, default setting is 06.00 tons). Press any key for 3 seconds to cancel regeneration, system will back to stand-by status and returns to the normal service.

⑨ **Reset Default**

The factory default value will be restored if "**Load Default**" was chosen

Resume the default

Press [MENU] to cancel

Press [SET] to confirm

The factory default value is:

Regeneration time: 2 a.m;

Regeneration cycle: 7 days

Regeneration duration:

Backwash: 20minutes

Brine Draw: 50mintues

Rinse: 15minutes

Refill: 10minutes

For meter immediate and meter delayed mode, the default meter is 6.00 tons.

SIMPLE TROUBLESHOOTING

Xsential Products are efficient and durable. In case of failure during use, the following simple troubleshooting list can work as a reference. Before repairing, the water and pressure inside the system have to be discharged firstly.

Problems	Analysis	Solution
No display on controller	A. Power shut-off or the power adapter dis-connect B. Power adapter failure C. Circuit board of controller failure	A. check power supply to ensure the stable power supply B. contact distributor to replace adapter C. contact distributor to replace Circuit board
Controller valve display "system under maintenance"	A. controller internal is clogged B. software failure C. controller valve failure	A. disconnect the power adapter and connect again B. same as above C. contact distributor
Water drains cannot be stopped	A. controller valve restoration failure B. Power shut-off when the system is under regeneration C. controller valve failure	A. disconnect the power adapter and connect again B. switch the bypass valve to bypass or close the controller valve inflow water C. contact distributor
Water refill cannot stop	A. refill time setting is too long	A. Reset refill time

	B. Power shut-off during water refilling C. controller valve failure	B. switch the bypass valve to bypass or close the controller valve inflow water C. contact distributor
The output water is salty	A. Regeneration time setting unreasonable B. Timer does not work normally C. the brine valve is clogged D. the water pressure is too low	A. increase rinse time and manually operate rinse once B. change timer C. clean up or replace brine valve D. pump up the water pressure
The output water after treatment is still hard	A. The inlet water quality exceeded the specification of which the softener can handle B. the controller timer does not set properly C. pressure in the water supply system is too high or too low D. the bypass valve does not set correctly E. Short of salt in the tank F. controller valve failure	A. contact local authority for detail of water quality B. shorten the re-generation cycle time or manually operate the sequence regeneration procedure C. add appliance to stabilize the pressure D. close the bypass valve E. fill up salt F. contact distributor